

Getting Started with Instructional Geocaching

A guide to
developing and
implementing a
geocaching activity
on your school
campus.

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Introduction

This guide is intended to provide you with basic steps to getting started with a geocaching activity on your campus. When we meet people at conferences and presentations that ask about instructional geocaching, one of the most frequent questions we hear is, “How do I get started?” While not a comprehensive list of everything you will ever need to know about geocaching, it should be enough to help you begin using geocaching as an instructional tool, and provide you with a foundation for designing your own instructional activities. It is developed from our experiences with instructional geocaching and knowledge we have accumulated from many sources.

Shari and Crystal

What you'll need:

- GPS units
- Cache Containers
- Waypoints
- Instructional content
- Student groups



GPS units

- **Handheld**

Most gps units that are designed for cars are not very reliable for geocaching. Look for handheld gps units that can be used to set waypoints. Waypoints are the actual coordinates of a location.

- **Sturdy**

Students will be using the gps units, so they should be able to withstand jostling and dropping. Garmin's eTrex series are low-cost, sturdy devices that hold up well for student use.

- **New batteries**

Most handheld gps units use AA batteries (usually two). The accuracy of the unit can be affected by the battery power, so try to use fresh batteries when starting a geocaching activity, and it's a good idea to have some spares on hand.

- **USB cable (one)**

When procuring gps units for your activity, look for a model that works with a USB cable (included) that can be used to transfer the waypoint file to multiple gps units. You can set the waypoints on each unit manually, but transferring them with a USB cable saves time and ensures that each unit has the same data.

- **At least one GPS per student group**

Each participant does not need to have a gps, but there should be at least one per group. Larger groups may need more gps units. It is a good idea to have the students take turns with the gps.

Containers

- **Waterproof**

Even if your cache container will only be outside for a few hours, make sure it's waterproof. An unexpected shower can ruin your plans and preparations. This can be a zip-lock container, a container with a tight-fitting lid, or a water-proof writing surface. If your instructional material is printed on paper, be sure to enclose the paper in a sealed zip-lock bag before placing it in the container.

- **Consider camouflage**

Although you might want to keep things simple initially, consider adding the challenge of camouflage to your geocaching activity. A container that is hidden near a metal pole can be covered in silver duct tape, one that is hidden in shrubbery can be covered with green or 'camo' duct tape. This is an area where you can be very creative.

- **Old film canisters, medicine bottles, Pringles cans, Altoid tins, etc.**

As long as it will hold the instructional material and can be protected from the weather, almost any container can be used. Consider attaching a magnet to the container so that it can be hidden on something metal.

- **Be sure container is right size for materials (multiple copies of math problem, etc.)**

You will want to include at least one copy of the problem, question, etc. for each group that will be looking for that cache. One group member's job can be to remove the problem and replace the container before moving to a nearby (but not too nearby) spot to work on the solution. Make sure the contents will fit into the container while not being difficult to remove.

Waypoints

- **Set waypoints on campus**

Use a GPS unit to set the waypoints on campus by standing at the location while you mark the waypoint. Navigate to the GPS menu, and select Waypoints, Manage Waypoints, etc. Then select Mark Waypoint (you can keep the default number to identify the waypoint, or you can give it a name using the on-screen keys).

- **Transfer waypoint file (gpx) to computer**

Use the USB cable to copy the file that contains the waypoints to a computer. The GPS unit will appear as an external/removable drive, and the file will have a .gpx extension. It will probably be located in a folder named GPX.

- **Copy waypoint file to other GPS units (USB)**

Connect the next GPS unit to the computer via the USB cable, and copy the file from your computer to the GPS unit in the same folder you retrieved it from on the first GPS.

- **Arrange waypoints so that groups are not at the same spot at the same time**

For example, if you have twelve waypoints and four groups, Group 1 can seek waypoints 1-3 on the north side of the campus, Group 2 seeks waypoints 4-6 on the south side of the campus, and so on. Or you can alternate the order that the groups seek the waypoints.

- **Arrange waypoints so that they are not easily visible from other waypoints**

If a group can see another group when they locate the cache, they will not have to use the gps to find it (giving them an unfair advantage).

- **Provide students with list of the waypoints their group will locate.**

It is not necessary to put all waypoints on each device, but you will need to either edit the gpx file or create different sets of waypoints for each device if you choose to vary them. When starting out, it may be easier to have the same set of waypoints on each device, and let the students know which ones they will be looking for.

Instructional Content

- **Can be any content area or multiple content areas**

Use geocaching as a review method, to introduce new content, to monitor progress, or check for understanding.

- **Problem-solving**

Caches usually contain a problem to solve or a question to answer, but you are only limited by your imagination and creativity. Caches can contain clues, materials to study or research, or data.

- **Clipboards and/or calculators**

Provide tools that students need to collaborate or solve the problem.

- **Answer Key**

The group leader (teacher assistant, parent volunteer, etc.) can have the answer key that enables group to check their solution and move on to next waypoint if correct, or continue collaborating on a solution if incorrect.

Student Groups

- o **Ideal Group Size**

The ideal group size is three, but this activity can be effective with larger groups (up to six). A group of three students can collaborate well and share the workload effectively, but a group that is too large will be difficult to manage while out on the campus. As with any group activity, the participants' age, skill level, social skills, and motivation are all important factors to consider when creating groups.

- o **Roles**

Each group member has a role, and the role can change from one waypoint to another (navigator, recorder, photographer, calculator, etc.).

- o **Training**

Students should receive training before activity begins. A video that introduces the concept of geocaching is a good way to help students understand the activity, and training on how to locate waypoints with the gps is essential. These can be done in advance of the day of the geocaching activity, and repeated if necessary.

- o **Collaboration**

It is important that students understand that they will be expected to collaborate on a solution in order to move to next waypoint. Even reluctant students are usually enthusiastic about geocaching activities and are motivated to work with the group, but they should be aware that collaboration is part of the activity and will affect group success.

Additional Resources:

- o Caching In On Learning Wiki: <http://cache-n-learn.wikispaces.com/>
- o Geocaching Lesson Plans LiveBinder: <http://www.livebinders.com/play/play?id=301912>